5202

RECEIVED
DEC 12 1966
REGION III

HAMMERMILL PAPER COMPANY

AREA CODE 814 • 456-8811
ERIE • PENNSYLVANIA • 16512

December 9, 1966

Mr. Larry Miller
Sanitary Engineer in Charge
Commonwealth of Pennsylvania
Region Office III
996 South Main Street
Meadville, Pennsylvania 16335

Dear Larry:

We have carefully reviewed the report of the survey made of our effluents and Lake Erie on September 26, 1966. Thank you for sending us a copy as covered in your letter of November 14, 1966 to Dr. Jackson. I would like to comment in detail on the report. The points discussed are generally those covered in the conference held in your office on October 31, 1966 before the report was completed.

We appreciated the chance to participate with you in the sampling program so that we could run our own determinations on the various samples. You will recall that on completion of the sampling, the effluent samples were divided with a portion being retained by Hammermill and the remainder being sent to Harrisburg for analysis. Sampling from the boat in the lake was carried out independently. The samples taken by us on each traverse were kept separate so that we have two samples representing each sample station. Your samples from the second traverse were combined with those taken on the first traverse so that you have only one sample representing each sample station.

We have compared our analyses of these samples with the results shown in your report of November 3, 1966 and would like to point out several instances of important disagreement. Our tests made on the five effluent samples are shown in Table I. Our tests made on the samples taken from the lake are shown in Table 2. Comparisons between our tests and those reported by you are shown in Tables 3 and 4.

Referring to Table 3 you will note that some of the differences are minor and might be accounted for by aging of the samples or by differences in analytical technique or interpretation. However, we feel that something must be wrong in the reported turbidity of 5000 and suspended solids of 2480 mg/liter in the sample of concentrated spent liquor for deep well disposal.

Our portion of the sample was entirely free from any turbidity or suspended matter and it remained that way until discarded several weeks later. We suspect that the dark color of this solution was measured as turbidity and that the Gooch filter was not properly washed in the suspended solids determination. We cannot tolerate any suspended matter in this liquor as it would soon block the porous strata into which we are pumping.

2 Since we are all greatly concerned with the effect of our effluents on the condition of the lake we were dismayed by the portion of the report dealing with the lake samples. The report stresses the dissolved oxygen tests made by the Winkler method and (except for their inclusion in a table) makes no reference to the dissolved oxygen tests made with a galvanic cell by Mr. Crick. We are sure that you are well aware of the serious errors inherent in the Winkler test in the presence of pulping wastes but would like to quote from the eleventh edition of "Standard Methods for the Examination of Water and Waste Water", page 313:

> "....The error with samples containing 0.25% by volume of digester waste from the manufacture of sulfite pulp may amount to 7-8 mg/l D.O....."

It is generally accepted that galvanic cell measurements are valid to determine dissolved oxygen in the presence of pulping waste. Thus, the minimum dissolved oxygen was 7.0 mg/l not 3 as reported.

3 The map in the report does not accurately cover the area involved. Figure 1 is a tracing of U. S. Lake Survey Chart No. 332 (1959), the U. S. Army, Corps of Engineers. You will note that the GE Fishing Club is actually located at approximately 42° 9.7' latitude and 80° 1.7' longitude instead of 42° 10.5' latitude and 79° 59.8' longitude as indicated on your map. Your map, indicating a distance of about 3 miles between our outfall and Four Mile Creek instead of the more accurate distance of about 1.6 miles implies a much greater area than was actually covered.

4 In comparing your tests on the lake samples with our tests and taking into consideration that the samples were taken independently from opposite sides of the boat and not always at exactly the same depth, we find excellent agreement for dissolved oxygen by the galvanic cell method, color, turbidity, alkalinity and BOD. We question the low pH values reported on these samples, particularly the value of 6.1 on the sample from the Chestnut Street intake. The city water department records

HAMMERMILL PAPER COMPANY

show a pH of 8.1 at that time. We also find it difficult to believe that the suspended solids were 90 ppm or over in half of the samples when the maximum turbidity reported was only 10 ppm. That these determinations must be in error can be shown by a comparison of the dissolved solids in these samples calculated by subtracting the reported suspended solids from the total solids.

We cannot agree that the coliform concentrations found in some of the lake samples could be attributed to our effluents. Our sanitary wastes are collected in a completely separate sewage system and transferred from our lift station to the city sewer. We have had bacteriological examinations made on our effluent for several years. We are aware of the high coliform count sometimes found in the paper mill effluent and suspected that the count in the wood room effluent might also be high. However when these effluents mix with the pulp mill effluent of low pH the coliform bacteria are destroyed. Coliform tests made on samples taken from our outfall generally show zero or very low counts. We believe that the close proximity of the city sewer outfall to this area accounts for the presence of the high coliform concentration. We believe that the lake itself is the source of coliform bacteria in our mill. We often find counts as high as 11000/100 ml in our raw water supply. Tests made on the outfall on November 14, 21 and 28 have shown counts of 0, 3 and 9 MPN per 100 ml respectively. We will send you a complete report on our testing program when more data has been obtained. We have discussed this with several expert bacteriologists and all agree that the source of the coliform bacteria is the lake water and that our paper mill system provides the proper environment for their multiplication. no doubt

We appreciate the opportunity to examine your report and hope that our comments will help to promote better agreement between us in future surveys.

Very truly yours,

HAMMERMILL PAPER COMPANY

R. W. Brown
Director of Central Research

bat
Attachments